APR 15 2003

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

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April 15, 2003

Water Docket
Environmental Protection Agency
Mailcode 4101T
1200 Pennsylvania Ave., NW
Washington, DC 20460
Attention Docket ID No. OW-2002-0050

Re: Advanced Notice of Proposed Rulemaking on the Clean Water Act Definition of "Waters of the United States"; NMGF Doc. No. 8241.

Dear Sirs:

The New Mexico Department of Game and Fish (Department) has reviewed the "Advanced Notice of Proposed Rulemaking on the Clean Water Act Definition of 'Waters of the United States'" (ANPRM), as announced 15 January 2003 in Federal Register (2003).

According to the ANPRM, the U. S. Supreme Court (Court) decision on the case of Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers et al. (Corps) eliminates Clean Water Act (CWA) jurisdiction over isolated waters that are intrastate and non-navigable, where the sole basis for asserting CWA jurisdiction is the actual or potential use of such waters as habitat for migratory birds that cross state lines in their migrations. The ANRPM further states that SWANCC also calls into question whether CWA jurisdiction over isolated, intrastate, non-navigable waters could now be predicated on the other factors listed in the Migratory Bird Rule or the other rationales of 33CFR 328.3(a)(3)(i)-(iii).

The ANPRM solicits comment from the public on the following issues:

(1) Whether, and if so, under what circumstances the factors listed in 33CFR 328.3(a)(3)(i)-(iii) (i.e., use of the water by interstate or foreign travelers for recreational or other purposes, the presence of shellfish that could be taken or sold in interstate commerce, the use of the water for industrial purposes by industries in interstate commerce) or any other factors provide a basis for determining CWA jurisdiction over isolated, intrastate, non-navigable waters.

20p.

(2) Information regarding the functions and values of wetlands and other waters that may be affected by the issues discussed in the ANPRM.
(3) Whether the regulations should define "isolated waters," and if so, what factors should be considered in determining whether a water is or is not isolated for jurisdictional purposes.

We address these issues in Sections 1-3 below, as well as provide background on the SWANCC decision and potential effects to New Mexico.

BACKGROUND

SWANCC. The January 2001 Court's ruling on the SWANCC case limited the jurisdiction of the Corps under Section 404 of the CWA. Specifically, the Court ruled that the "Migratory Bird Rule", adopted by the Corps in 1986, exceeded the authority granted to the Corps by Congress in CWA Section 404(a), and that the Corps' jurisdiction "...over an abandoned sand and gravel pit in northern Illinois, which provides habitat for migratory birds..." was lacking. The "Migratory Bird Rule" was an administrative interpretation that the presence of migratory bird aquatic habitat was sufficient to confer CWA jurisdiction over such aquatic habitat pursuant to the Commerce Clause under 33 CFG 328(a)(3). The Court held that regulation of isolated waters based solely on the use of such waters by migratory birds was not permissible (Wagner 2002).

Migratory Bird Rule. The Corps issued regulations in 1977 defining the term "waters of the United States" to include:

> "waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate of foreign commerce including any such waters: i) which are or could be used by interstate or foreign travelers for recreational or other purposes..." 33 CFR 328.3(a)(3) (1999) (Kusler 2001).

In 1986 the Corps attempted to clarify its jurisdiction under the CWA by adopting the Migratory Bird Rule, which provided, in part, that Section 404(a) jurisdiction extended to intrastate waters:

> "a. Which are or would be used as habitat by birds protected by the Migratory Bird Treaties; or
> b. Which are or would be used as habitat by other migratory birds which cross state lines...51 Fed. Reg. 41217." (Kusler 2001).

The Migratory Bird Rule was an administrative interpretation by the Corps stating that the presence of migratory bird aquatic habitat was sufficient to make such aquatic habitat jurisdictional under 33 CFR 328(a)(3), which provides for CWA jurisdiction over "other waters" based upon the Commerce Clause of the U.S. Constitution (Kusler 2001).

In the SWANCC case, the Court held that Congress did not intend Section 404(a) of the CWA to regulate isolated waters based solely upon the use of such waters by migratory birds (Kusler 2001). However, according to the ANPRM the Migratory Bird Rule does not apply only to migratory birds (Federal Register 2003: p. 1994):

> "In regulatory preambles, both the Corps and EPA provided examples of additional types of links to interstate commerce which might serve as a basis under 40 CFR 230.3(a)(3) and 33 CFR 328.3(a)(3) for establishing CWA jurisdiction over interstate waters, which were not part of the tributary system or their adjacent wetlands. These included use of waters (1) as habitat by birds protected by the Migratory Bird Treaties or which cross State lines, (2) as habitat for endangered species, or (3) to irrigate crops sold in commerce. 51 FR 41217 (November13, 1986), 53 FR 20765 (June 6, 1988). These examples became known as the Migratory Bird Rule, even though the examples were neither a rule nor entirely about birds."

IMPLICATIONS FOR THE UNITED STATES

New regulations potentially adopted by remedial legislation of the CWA, in response to post-SWNACC interpretations by the Corps and the U.S. Environmental Protection Agency (EPA), could potentially remove CWA protections for 30% to 60% of the Nation's wetlands (Kusler 2001). The total amount of wetland acreage removed from CWA protections will depend upon the definitions used by the Corps and EPA and ultimately supported by the courts for the terms "adjacent", "tributary", and "significant nexus " (Kusler 2001).

IMPLICATIONS FOR NEW MEXICO

Both the Albuquerque and El Paso Districts of the Corps have recently interpreted the SWANCC decision broadly in New Mexico by asserting that closed basins are no longer jurisdictional under Section 404 of the CWA. This overly broad interpretation of the Court's decision threatens the health of rivers, streams, and wetlands within closed basins of New Mexico, which cover approximately 20% of the surface area of the state.

However, it is the professional opinion of the New Mexico Environment Department (NMED) and EPA's Region 6 that the only waters the Corps will no longer regulate as a result of SWANCC are those for which the sole basis of CWA jurisdiction was the presence of migratory bird habitat (NMED personal communication). In support of NMED's and EPA's interpretation, page 1994 of the ANRMP states "The SWANCC holding eliminates CWA jurisdiction over isolated, intrastate, non-navigable waters where the **sole basis** [emphasis ours] for asserting CWA jurisdiction is the actual or potential use of the waters as habitat for migratory birds that cross state lines on their migrations."

Interpretations of the SWANCC decision by the Corps and the EPA have major implications for the abundance of isolated wetlands and waters of closed basins in New Mexico, as well as the diverse and abundant wildlife resources that rely on these aquatic resources. Of the 867 species of vertebrates known to occur in New Mexico, approximately 479 (55%) rely wholly, or in part, on aquatic, riparian or wetland habitat for their survival (NMGF 1994). In arid New Mexico, Dahl (1990) reported that fully one third of the wetlands that once existed in the state have been lost, which represents an estimated loss of 3¼ acres per day over a 200-year period from the 1780's to the 1980's (NMED 2000). Currently wetlands comprise slightly less than 1% of the State's surface area: surface water represents only 0.2% (141,440 acres) (US DOI Geological Survey 1970) and wetlands and riparian areas comprise another 0.6% (481,900 acres) (Dahl 1990). The quality of these habitats has also diminished. Of the estimated 6,000 miles of

streams in New Mexico, approximately 54% (3,226 miles) are impaired to some degree by water pollution (Water Quality Control Commission 1992).

Closed basins in New Mexico that could be removed from CWA jurisdiction as a result of new regulations, or a narrow administrative interpretation of SWANCC, include isolated wetlands and waters of the Tularosa, Mimbres, Estancia, San Augustine, Salt, Southwestern and North Plains basins (Figure 1). More than 84 miles of perennial and 3900 miles of intermittent waters exist within these closed basins, representing over 14% of the perennial and intermittent waters in the State. Isolated wetlands (playas, municipal lakes and ponds), which are abundant in the Eastern Plains of New Mexico and provide important waterfowl wintering habitat, are also at risk of losing CWA protection. The Department recognizes that isolated wetlands and waters of closed basins have designated uses for fish and wildlife indigenous to New Mexico under Sections 20.6.4.801-899 of the State's Standards for Interstate and Intrastate Surface Waters, NMAC 1978, as amended in 2002.

U.S. Clean Water Act and New Mexico Water Quality Act Although the SWANCC case specifically involves Section 404 *Dredged and Fill Material Permit Program* of the CWA, the administrative interpretation of the Court's decision may also affect the scope of regulatory jurisdiction under other provisions of the CWA, including sections 303 (*Water Quality Standards Program*), 311 (*Spill Program and the Oil Pollution Act*), 401 (*State Water Quality Certification Program*), and 402 (*National Pollutant Discharge Elimination System Permitting Program*). Under each of these CWA sections, the relevant federal agencies and appropriate state regulatory agencies (e.g., Energy, Minerals and Natural Resources Department, NMED) have jurisdiction over "waters of the United States."

The Water Quality Standards Program (Section 303) is particularly important to New Mexico since State and Tribal governments are authorized to establish water quality standards for waters of the U.S. to "protect the public health or welfare" and "enhance the quality of water", while also considering use and value of waters of the U.S. for public water supplies, propagation of fish and wildlife, recreation, agriculture, industrial, and other purposes.

Specific provisions of the CWA were designed to improve protection of the Nation's waters while recognizing "the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources..." 33 U.S.C. 1251(b). The coordination of state water quality certification under Section 401 programs for federal CWA 404 permits has allowed many states to exercise a significant measure of regulatory authority over wetlands without the expense of establishing independent state permitting, monitoring, and enforcement programs.

The state 401 program has also been particularly important in western states such as New Mexico where wetlands represent less than one percent of the State's surface area. In New Mexico, previous discharge practices to wetlands and waters of isolated basins associated with extractive-use industries resulted in contamination of ground- and surface-water (Boyer 1986, Rail 1989, McQuillan and Parker 2000), impairment of aquatic ecosystem functions (Davis and Hopkins 1993, Davis et al. 1996a, 1996b) and wildlife mortality (Dein et al. 1997, Bristol 1999).

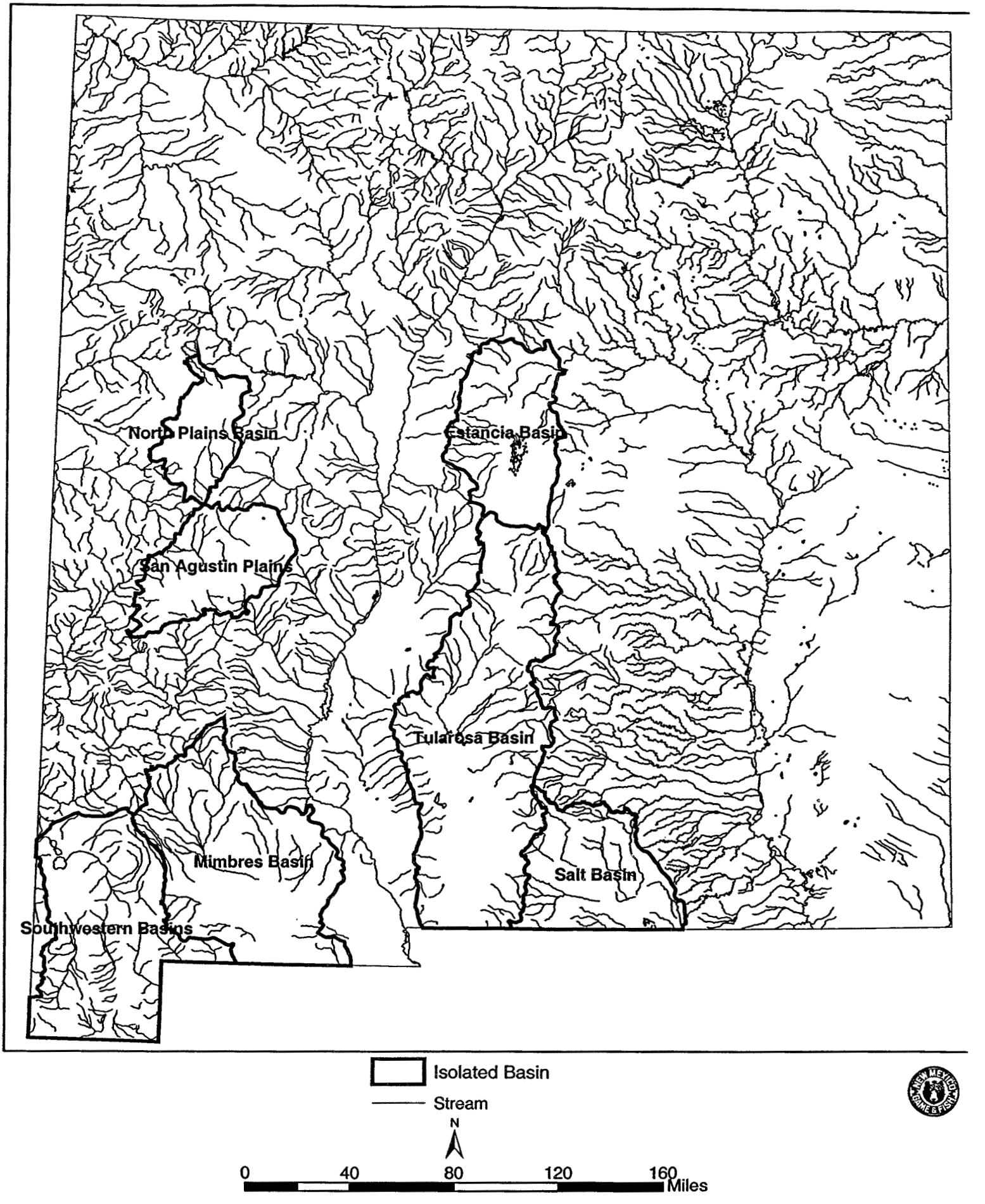


Figure 1. Map showing isolated watershed basins in New Mexico, 2003.

Under the Section 401 program the NMED has made significant strides to protect surface water of the State from such activities.

By asserting that isolated, non-navigable, intrastate closed basins are no longer considered jurisdictional wetlands under Section 404 of the CWA, the Corp's narrow interpretation of theSWANCC decision reduces and, in many instances, eliminates the State's authority to effectively protect surface waters of New Mexico and to manage wetlands and waters of isolated basins for beneficial use by fish and wildlife.

1) OTHER RATIONALES FOR INTERSTATE COMMERCE

Decision makers should consider economic contributions to interstate commerce from socio-political activities related to wetlands and waters of isolated basins for: (1) recreational use (hunting, fishing, wildlife viewing); (2) enforcement of fishing and hunting regulations; (3) resource agency actions targeting management, conservation, protection and research of the aquatic resources of these areas; and (4) educational purposes.

Approximately 80 percent of the drainages in New Mexico are not perennial (USGS 1:2,000,000 Digital Line Graph). Many of these fit the definition of waters of the U.S. under 33 CFR 328.3(a)(5) as they are tributaries to waters of the U.S. However, even intermittent drainages in closed basins should be considered waters of the U.S. as they are designated for livestock, wildlife and fisheries uses. Many of these drainages supply water to stock tanks, and the livestock and wildlife uses of these waters affect interstate and foreign commerce (NMED personal communication). The potential degradation of wetlands and waters of isolated basins following broad post-SWANCC interpretations could result in impairment of aquatic habitat conditions for fish and wildlife in New Mexico, which potentially devalues wetlands and waters of isolated basins as areas for recreational use by hunters, anglers and recreationists.

Although the Court ruled against the presence of migratory bird habitat as the sole indicator of interstate commerce for CWA jurisdiction, it did not consider the interstate commerce of out-of-state sports persons hunting of big game, small game and waterfowl that use isolated, intrastate, nonnavigable waters for survival. Neither did the Court consider CWA jurisdiction based on the use of these waters by out-of-state anglers, or by recreationists involved in wildlife viewing. These uses by out-of-state hunters, anglers and recreationists provide critical revenue to the Department.

In the 2001-2002 hunting season 27,931 non-resident large and small game licenses were sold to out-of-state hunters, which provided $5,739,050 dollars in revenue to the Department (NMGF statistics). Because New Mexico is an arid state, the loss of any of these waters to development or water pollution (if New Mexico Water Quality Act standards for wildlife, livestock and fisheries are removed) could adversely affect the persistence of wildlife populations in these arid areas. Waterfowl surveys in New Mexico have indicated a declining trend in waterfowl numbers wintering in the state, at least partially as a result of shrinking water supplies in lakes and rivers from the ongoing severe drought.

Pursuant to its statutory mandates to administrate Game and Fish and Outdoor Recreation (*Chapter 17 NMSA 1978*), the NMDGF actively manages 17 isolated wetlands (ponds, lakes) and five intermittent streams (Mimbres River, Running Water Draw, Tularosa Creek, Three

Rivers, Tajique Creek) to provide fishing opportunities for resident and non-resident anglers. These cold- and warm-water fishery management activities are funded in part by a user-based licensure fee regulated by the NMDGF under sections*17-3-2 and 17-3-13 NMSA 1978*, and include hatchery operations, population stocking and augmentation programs, and habitat improvement.

These enclosed basin waters are subject to interstate commerce by the use of these waters by out-of-state anglers. In 2001, 116,000 non-residents fished in New Mexico, spending $310,893,000 for licenses, equipment and trip-related expenditures. These non-resident anglers provided more than $1,345,000 in license fees to the Department.

These data support the position that broad interpretations of the SWANCC decision that exclude isolated wetlands from protection under the CWA may adversely impact recreational use of state-managed ponds, lakes and intermittent streams as a fishery resource in New Mexico. Such interpretations would undermine the Department's ability to manage these wetlands in accordance with its statutory mandates to provide fishing opportunities for the very user-based constituency that financially supports this commonwealth resource through a reduction or loss of revenues generated by fishing license sales. Under this scenario, intrastrate and interstate commerce, especially local economies, could be adversely impacted.

New Mexico has some of the most diverse and important bird habitats in the United States, attracting thousands of visitors from all over the world. In 2001, 671,000 people spent more than $558 million on wildlife viewing in New Mexico (USFWS 2002). Considering the fact that several of New Mexico's enclosed basins occur in the southern part of the state, particularly in the southwest part of the state where bird diversity is high and rare species occur, we believe that a significant percentage of wildlife viewing is conducted by out-of-state recreationists within closed basins, contributing to interstate commerce by the monies invested in local communities for travel-related expenses (e.g. food, lodging, gas, etc.

Therefore, closed basin waters where these activities occur (hunting, fishing, wildlife viewing) contribute significantly to interstate commerce and represent a critical source of revenue for the Department, and thus should not be exempted from CWA jurisdiction and protection.

Significant benefits are received by local economies across interstate boundaries, generated by research and land management personnel while attending professional regional and international symposia, resource and regulatory policy meetings, and community planning initiatives, to exchange knowledge derived from the study of the values, functions and ecosystem services afforded by wetlands and waters of isolated basins.

Hydrologic and mineral resources extracted from waters and wetlands of isolated basins in New Mexico also provide significant sources of revenue for the State and private industries (e.g., oil and gas, potash, agricultural and livestock) that contribute to interstate and foreign commerce.

2) ECOSYSTEM SERVICES, FUNCTIONS AND VALUES

Wetlands and waters of isolated basins provide many ecosystem services (valuable commodities to society derived by natural processes) and functions inextricably tied to intrastate, interstate

and foreign economies. These aquatic ecosystems are commonly linked to shallow groundwater aquifers and serve as collection basins for surface water drainage. As such, wetlands and waters of isolated basins serve as points for groundwater recharge, surface water storage, and material sinks that function in the water purification process (nutrient cycling, pollution abatement). These ecosystem functions provide clean water sources for human consumption, agricultural irrigation programs, and beneficial use by livestock, fish and wildlife. Wetlands perform valuable flood storage services during storm events which provides protection from flood damage.

The "biodiversity services" (Costanza et al. 1997) provided by wetlands are numerous and support a wide range of societal functions such as production of food and raw materials, biological control of pests, and buffering of human-caused landscape disturbances (see also Zedler 2003). Wetland flora serve as source of forage for rangeland livestock and wildlife. In the Southern High Plains of southeastern New Mexico and the Texas Panhandle, where playas are well-interspersed in an agricultural landscape, wetland plants provide for a greater diversity of insect pollinators that directly benefits the pollination of agricultural crops (Bolen 1989).

Moreover, wetlands and waters of isolated basins should be considered as self-contained, functional ecosystems that serve not only as critical feeding, resting and breeding areas for migratory waterfowl, but also as habitats that serve similar functions for a broader spectrum of fish and wildlife species. In New Mexico, these circumstances include a great diversity of animal taxa that derive beneficial use from aquatic habitats and riparian areas associated with isolated basins, including upland game and big game species, warm- and coldwater fisheries, threatened and endangered species, and non-game species with aspects of their life history critically linked to wetlands and waters of isolated basins.

Migratory Waterfowl. Currently, wetland conservation policies in the United States call for no net loss of wetland habitat into the future (Federal Register 1995). The Court's ruling on the SWANCC case is contrary to existing wetland conservation policies and cooperative management strategies between local, State, Federal, Tribal, provincial and private land stewards to protect and conserve migratory water fowl as set forth under The North American Wetlands Act. A key component of this legislation is "to sustain an abundance of waterfowl and other migratory birds consistent with the goals of the North American Waterfowl Management Plan..." by fostering partnerships in Canada, Mexico, and the United States (Graziano and Cross 1993). These efforts obviously support the role of wetlands and waters of isolated basins as it relates directly to interstate and foreign commerce of migratory waterfowl and associated abiotic components (hydrology, habitat diversity, etc.) and biotic resources (plants, animals) of isolated basins.

Non-game Species. In New Mexico, wetlands and waters of isolated basins consist of a diversity of aquatic habitats ranging from perennial to intermittent reaches of spring-fed streams, ephemeral drainages, palustrine wetlands (wet meadows, marshes, ponds, lakes), playas, vernal and ephemeral pools, and geologic depressions (erosional and collapse basins, rock pools). This diversity of aquatic ecosystems is home to an equally diverse fauna of non-game invertebrates and vertebrates, many of which are obligate aquatic taxa (crustaceans, mollusks [freshwater clams, aquatic gastropods], most amphibians and select reptiles [aquatic turtles and snakes], fish,

birds and mammals). Many aquatic macroinvertebrates and vertebrates rely on wetland habitats and their associated riparian and ecotonal areas (the land-water interface) to complete critical stages of their life histories.

The presence and persistence of obligate aquatic biota (flora and fauna) in wetlands and waters of closed basins in New Mexico serve as biological indicators of aquatic ecosystem health and integrity, which ultimately reflects on land-use practices from a larger landscape perspective. Human-caused alterations and fragmentation of aquatic habitats of isolated basins have profoundly affected aquatic biodiversity in New Mexico (Cole 1996, Cole et al. 1996, Propst 1999). Ultimately, such habitat fragmentation and loss translates into accumulative, stepping-stone reductions of genetic, species and ecosystem levels of aquatic biodiversity, which can manifest irrevocable loss of wetland values, functions and services.

From this perspective, numerous authors have emphasized protection of wetlands and waters of isolated basins as unique, functioning ecosystems as the top priority for the conservation of aquatic habitats and non-game species (New 1995, Neves et al. 1997, Williams and Davis 1997, Belk 1998). Similar ecosystem-based approaches and integrated management strategies have gained momentum for the conservation of migratory waterfowl in North America (e.g., Playa Lakes Joint Venture, Ducks Unlimited, Inc.). However, such efforts have received broad-based support through national and international legislative authority, resource policy formulation and significant financial contributions from private, non-profit and government agencies. These contributions to research and conservation of isolated waters represent another link to interstate commerce.

Unfortunately, the "less charismatic" non-game fauna of isolated basins do not enjoy such broad-based support. To reverse this trend, resource agencies, working in collaboration with public and private lands stewards, commonly adopt "best management practices", habitat conservation plans, conservation agreements, etc., as strategies to protect non-game species and their aquatic habitats. These collaborative efforts serve as public outreach to promote an understanding of the importance of protecting the aquatic habitat and non-game resources of isolated basins in New Mexico. Broad interpretations of the SWANCC decision, as witnessed recently in New Mexico, threaten to undermine these proactive conservation efforts by limiting aquatic habitat protection previously afforded to wetlands and waters of isolated basin under state Section 401 and Section 404 of the CWA. Ultimately, this post-SWANCC scenario can force resource agencies to adopt more restrictive and controversial conservation measures, such as listing species as threatened or endangered in order to protect their aquatic habitats and to prevent their unregulated take.

Threatened and Endangered Species. Wetlands and waters of isolated basins provide aquatic habitats and resources for threatened and endangered species in New Mexico. Under the Wildlife Conservation Act of 1974 (WCA), as amended in 1995, the Department has the primary responsibility to review, manage and maintain the status of wildlife indigenous to the state considered as threatened or endangered (17-2-37 to 17-2-46 NMSA 1978).

The Department's technical and administrative staff, working in collaboration with colleagues at the federal level, are actively involved in recovery plan development and implementation, habitat monitoring and management (protection, restoration, improvement), population studies

(augmentation, repatriation, controlled propagation), and public meetings to address conservation issues of threatened and endangered species that occur in isolated waters and wetlands in New Mexico and adjacent states, including Mexico.

These inter-agency, multi-state, and binational activities contribute significantly to intrastate, interstate and foreign commerce. During the period 2000 to 2003, the annual budget of the Department's Non-game and Endangered Species Program averaged approximately $94,000 for conservation and management activities related to non-game and state and federally listed animal species that occur in aquatic habitats of isolated basins.

Of the 118 species and subspecies of wildlife listed as threatened and endangered in New Mexico (NMDGF 2002), nearly 25% of these taxa (30 of 118) are restricted to or occur in wetlands, riparian areas and waters of isolated basins (Table 1). Several of these species occur in isolated desert spring systems and temporary waters (seasonal pools) that are not considered "perennial" (USGS 1:2,000,00 Digital Line Graph). Unlike the federal Endangered Species Act of 1973 (ESA), there are no provisions in the New Mexico WCA regulating the "take" of state-threatened species, nor is there provision for habitat protection of state-listed species (threatened or endangered) that occur in these aquatic ecosystems.

Under circumstances where state regulatory mechanisms of the WCA appear inadequate, and protection of animal species in New Mexico may not be warranted under the federal ESA, state-listed species could be afforded protection under the CWA Section 401 program, or other CWA sections (303, 311, 402), by a narrow interpretation of the SWANCC decision. The broad interpretation of SWANCC by the Corps in New Mexico potentially limits CWA protection to the aquatic habitats of state-listed wildlife or rare species that otherwise are not protected by the WCA or the federal ESA.

For example, Lang and Rogers (2002) reported on the occurrence of the Critically Endangered fairy shrimp, *Streptocephalus moorei*, (IUCN 1996, 2000) from three isolated ephemeral wetlands in southern New Mexico. While state listing of this species may not be presently warranted, questions remain whether the aquatic habitats of this globally-rare crustacean are considered jurisdictional "waters" under the current interpretation of Section 404 of the CWA or related sections (301, 303, 401, 402). Interpretation of the terms "isolated", "waters of the U.S." and "adjacent", as referenced in the SWANCC decision, has major implications for protecting *S. moorei* and the macroinvertebrate taxa listed in Table 2 that occur in wetlands, riparian areas and waters of isolated basins in New Mexico.

3) DEFINITIONS

Considering the current trend of overly broad interpretations by the Corps of the Court's ruling on the SWANCC case in New Mexico, a clear regulatory definition of "Waters of the United States" appears in order. This is particularly germane for New Mexico since the State Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC 1978, as amended in 2002) adopt water quality standards that are consistent with and serve the purpose of the New Mexico Water Quality Act (Section 74-6-1 through 74-6-17 NMSA 1978) and the federal CWA. It is the objective of the federal CWA to restore and maintain the chemical, physical, and biological

integrity of the nation's waters, including those in New Mexico (20.6.4.6.B. NMAC 1978, as amended in 2002).

The mutual goal of these surface water quality standards provides for designated use or uses specified by the state under Sections 20.6.4.101 through 20.6.4.899 NMAC 1978, as amended in 2002, which includes the protection and propagation of fish, shellfish, wildlife, and other essential uses of New Mexico's surface waters considered as water supply for livestock, agricultural, municipal, domestic, and industrial purposes. While surface waters of the state include closed basins (see Sections 20.6.4.701 through 20.6.4.805 NMAC 1978, as amended in 2002), numerous isolated surface waters and wetlands of closed basins may not be protected by state or federal statutes. Whether are not these isolated surface waters are considered "waters of the U.S." or "waters of the State" that merit protection under the CWA is central to many issues posed by the current ANPRM. Since the State's surface water quality standards are modeled after similar standards set forth under the CWA, it behooves regulatory authorities to clearly define "waters of the United States."

The Association of State Wetland Mangers, Inc. articulated the importance of how interpretations of key terminology by the EPA and Corps could play a critical role in determining post-SWANCC authority of CWA jurisdiction over "waters of the United States" (Kusler 2001). The amount of CWA protection potentially removed will depend upon the definitions used by the EPA and the Corps, and ultimately supported by remedial legislative and judicial actions for the terms "adjacent", "tributary" and "significant nexus" (see Kusler [2001]). The Court ruled against the application of the "Migratory Bird Rule" to assert CWA jurisdiction over "isolated, nonnavigable, intrastate waters" that are not tributary or adjacent to navigable waters or tributaries. In New Mexico, clarification of "isolated waters" would resolve current differences of post-SWANCC interpretations between the Corps, EPA Region 6 and state agencies.

The Department recommends that the terms "isolated waters" and "waters of the United States" be defined by considering both abiotic and biotic components of aquatic ecosystems that ascribe to wetland values, functions, services and designated uses of such waters. The abiotic components should include surface water and groundwater interactions, hydrologic factors, edaphic (soil) conditions and geomorphic setting. The biotic component should consider not only the presence of hydrophytic plants, but also include all obligate aquatic biota—flora and fauna (i.e., obligate aquatic macroinvertebrates).

The term "wetlands", as defined by the Corps, does indeed consider a combination of three of these abiotic and biotic components (i.e., hydrology, hydric soils, hydrophytic plants), where "...evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, vegetation) must be found in order to make a positive wetland determination." (USACOE 2000, pp.9-10). However, this definition excludes the presence of obligate aquatic macroinvertebrates (Mollusca, Crustacea, Insecta; see Table 2) that, like the other component in this biotic nexus, hydrophytic plants, are also wholly dependent on "wetlands" for their persistence across the landscape and/or survivorship in "isolated waters." The fact that many of the aquatic macroinvertebrates listed in Table 2 occur in both "waters of the United States" and "isolated, nonnavigable, intrastate waters" supports the Department's position that these taxa

could serve as equally well for making "wetland" determinations as the three indicators traditionally used in wetland identifications and delineations.

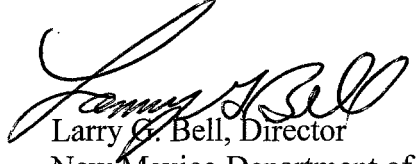
As regards the identification of "isolated waters", with particular reference to bodies of water (i.e., "playa lakes" and "prairie potholes") that fall under the broadly defined term "wetlands" (see 33 CFR 328.3(a)(3)), branchiopod crustaceans (fairy shrimp, clam shrimp, tadpole shrimp and water fleas) and several orders of aquatic insects (Odonata, Hemiptera, Coleoptera, Diptera), represent quintessential groups of aquatic macroinvertebrate that epitomize "isolated waters" of seasonally inundated aquatic habitats (temporary waters) that merit recognition as regulated "wetlands" and "waters of the United States."

Representatives of these taxonomic groups occur in temporary (seasonal) "wetlands" termed "playa lakes" and "prairie potholes" that are considered jurisdictional under the CWA. In numerous instances these macroinvertebrates occur in many other temporary aquatic habitats that possess all the attributes assigned to these so-named "wetlands", but these temporary waters are not termed as such. Many names have been given to these seasonally inundated wetlands, such as: vernal and ephemeral pools, rain and snow-melt pools, tinajas or rock pools, erosional depressions, geologic sinks, stock tanks, etc. (see Lang and Rogers 2002).

It would behoove all aquatic scientists and wetland regulatory authorities to: (1) consider using obligate aquatic macroinvertebrate taxa (e.g., Table 2*) as determinants of "wetlands" and "waters of the United States" since these biotic components are as equitably reliable indicators of "waters of the United States" as the three traditional "wetland" determinants (hydrology, soils, plants); and (2) standardize the plethora of terms (i.e., nomenclature) for these isolated, seasonally inundated "wetlands" (i.e., temporary waters) that provide similar "wetland" values, functions and services as have been identified for "playa lakes" and "prairie potholes" (Tiner et al. 2002). (* Additional species of these broad taxonomic groups particular to other geographic regions of the Nation should be considered for inclusion.)

We appreciate the opportunity to comment on this ANRMP. Should you have any further questions regarding our comments, please contact Mark Watson, Habitat Specialist, of my staff at (505) 476-8155 or mwatson@state.nm.us.

Sincerely,



Larry G. Bell, Director
New Mexico Department of Game and Fish

Attchs.

LGB/BKL/MLW

CC: Joy Nicholopoulos (Ecological Services Field Supervisor, USFWS)
Ron Curry (Secretary, New Mexico Environment Department)
Tod Stevenson (Assistant Director, NMGF)
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Table 1. Threatened and endangered wildlife species that utilize isolated aquatic habitats of New Mexico.

Common Name	Status		Isolated Aquatic Habitat Type		
	State[1] (WCA)	Federal[2] (ESA)	Riparian Areas	Spring-fed Wetlands	Isolated Bodies of Water
Chupadera springsnail	E	E		X	
New Mexico springsnail	E	E		X	
Socorro isopod	E	E		X	
Beautiful shiner	X	-			X
Chihuahua chub	E	T			X
Palomas pupfish	X	-			X
White Sands pupfish	T	CW			X
Lowland leopard frog	E	-	X	X	X
Chiricahua leopard frog	-	T	X	X	X
Western boreal toad	Ex	C	X	X	X
Great Plains narrowmouth toad	E	-			X
Colorado River toad	T	-	X	X	X
Piping plover	E	T			X
Least tern	E	E	X		X
Common ground-dove	E	-	X	X	X
Elegant trogan	E	-	X		
Southwestern willow flycatcher	E	E	X	X	X
Common black-hawk	T	-	X		

[1] State: E=endangered, T=threatened; Ex=endangered, believed extirpated; X = extirpated.

[2] Federal: E= endangered; T=threatened; PEW=proposed endangered withdrawn, conservation agreement developed; C = formally designated as a candidate for listing under the Endangered Species Act; CW=candidate status withdrawn, conservation agreement developed; SC = species of concern.

Table 1. (continued)

Common Name	Status		Isolated Aquatic Habitat Type		
	State	Federal	Riparian Areas	Spring-fed Wetlands	Isolated Bodies of Water
Bald eagle	T	T	X		X
Bell's vireo	T	-	X		
Abert's towhee	T	-	X		
Varied bunting	T	-	X		
Yellow-billed cuckoo	-	SC	X		
Arizona shrew	E	-	X		
Mexican long-nosed bat	E	E	X		
Peñasco least chipmunk	E	-	X		
Arizona montane vole	E	-	X	X	
Desert bighorn sheep	E	-	X	X	X
Least shrew	T	-	X		
Southern long-nosed bat	T	E	X		
Spotted bat	T	-	X		
Western yellow bat	T	-	X		
Southern pocket gopher	T	-	X		
Meadow jumping mouse	T	-	X	X	X
Jaguar	Restricted	E	X		

[1] State: E=endangered, T=threatened; Ex=endangered, believed extirpated; X = extirpated.

[2] Federal: E= endangered; T=threatened; PEW=proposed endangered withdrawn, conservation agreement developed; C = formally designated as a candidate for listing under the Endangered Species Act; CW=candidate status withdrawn, conservation agreement developed; SC = species of concern.

Table 2. Obligate aquatic macroinvertebrates that occur in "isolated waters" of New Mexico.

Phylum (Class)	Order	Family	Isolated Wetland Type: Stream	Palustrine	Temporary Pools	Comments
Mollusca	Veneroida	Sphaeriidae	X	X	-	peaclams, pillclams, fingernailclams
	Mesogastropoda	Hydrobiidae	X	-	-	*Pyrulopsis chupaderae*, *P. neomexicana*
	Basommatophora	Lymnaeiidae	X	X	-	pulmonate snails
		Physidae	X	X	-	pulmonate snails
		Planorbidae	X	X	X	pulmonate snails
		Ancylidae	X	-	-	freshwater limpits
		Carychiidae	X	X	-	*Carychium exiguum*
	Stylommatophora	Pupillidae	-	X	-	paludal species of *Gastrocopta*, *Pupilla* & *Vertigo*
		Succineidae	X	X	-	*Oxyloma retusum*, *Succinea* spp.
		Limacidae	X	X	-	slugs
		Polygyridae	X	X	-	*Linisa texasiana*
Crustacea (Branchiopoda)						
	Anostraca	Artemiidae	-	-	X	brine shrimp
		Branchinectidae	-	-	X	fairy shrimp
		Chirocephalidae	-	-	X	fairy shrimp
		Streptocephalidae	-	-	X	fairy shrimp
	Notostraca	Triopsidae	-	-	X	tadpole shrimp
	Diplostraca	3 families	-	-	X	clam shrimp (Lynceidae, Cyzicidae, Limnadidae)
	Cladocera	-	-	-	X	water fleas (*Daphnia* sp., etc.)
	(Platycopioida)					
	Calanoida	-	-	X	X	copepods
	Cyclopoida	-	-	X	X	copepods
	Harpacticoida	-	-	X	X	copepods
	(Ostracoda)	-	X	X	-	seed shrimp
	(Amphipoda)	Gammaridae	X	X	-	amphipods (side-swimmers, scuds)
		Hyalellidae	X	X	-	amphipods (side-swimmers, scuds)
	Decapoda	Cambaridae	X	X	-	crayfishes
Insecta						
	Collembola	-	X	X	X	springtails
	Ephemeroptera	-	X	X	-	mayfies
	Odonata	-	X	X	X	dragonflies, damselfies

Table 2. (*Continued*)

Phylum (Class)	Order	Family	Isolated Wetland Type			Comments
			Stream	Palustrine	Temporary Pools	
Insecta						
	Orthoptera	Acrididae	X	X	-	pygmy molecrickets
		Acrydiidae	-	-	X	grouse or pygmy locusts
	Plecoptera	-	X	-	-	stoneflies, numerous families
	Hemiptera	-	X	X	X	water boatman, back swimmers, etc.
	Neuroptera	Sisyridae	X	X	-	spongillaflies
	Megaloptera	Sialidae	X	X	-	alderflies
		Corydalidae	X	X	-	dobsonflies, hellgammites
	Trichoptera	-	X	X	X	caddisflies, numerous families
	Lepidoptera	-	X	-	-	aquatic moths, numerous families
	Coleoptera	-	X	X	X	aquatic beetles, numerous families
	Diptera	-	X	X	X	flies, gnats, midges, mosquitoes, numerous families
	Hymenoptera	-	X	X	X	parasitic wasps, numerous families